

## **Historic, Archive Document**

Do not assume content reflects current scientific knowledge, policies, or practices.



DEC 24 1909

LIBRARY  
RECEIVED  
DEC 31 1909  
NUMBER 3  
U. S. Department of Agriculture

VOLUME XVI.

# THE AGRICULTURAL STUDENT

A MONTHLY MAGAZINE DEVOTED TO AGRICULTURAL EDUCATION



DECEMBER, 1909

10 Cents per Copy

50 Cents per Year

# The Aristocrat of Moderate Priced Cream Separators

We are often asked the reason for the great success of the

**United States Separator**

In a nutshell it is this:

*U. S. Cream Separators are made of the best material are most thorough in skimming and most durable in wearing qualities.*

**UNITED STATES owner will stand back of these facts.**

Every line there is one best. Why? Because that one is the standard. In every line with Cream Separators, the **United States** is the **Standard Cream Separator**. So it is many thousands being operated in all dairy sections have established

its value, **Promises and performances.** There are cream separator manufacturers that promise great things—on paper—but in actual daily use their machines cannot fulfill their glaring claims.



When some glib salesman claims he has something equal to the **United States**, make him show you proof. *It is one thing to make a claim and another thing to prove it.*

The **United States** has the proof. For it **Holds the World's Record** for closest skimming in fifty consecutive runs, covering one month, at the Pan-American Exposition from the milk of ten different breeds of cows, a record never having been equalled.

**Before you decide** examine the **United States** carefully. Ask any of the thousands of satisfied users and get their verdict, then have a **United States** selling agent place a **United States** in your dairy on free trial and it will prove all claims.

In the meanwhile send for illustrated Catalogue No. 9.

**VERMONT FARM MACHINE CO., Bellows Falls, Vt.**

**FOR THOSE THAT OWN**



**SHEEP  
HOGS  
CATTLE  
HORSES  
POULTRY  
DOGS  
PET  
STOCK**

Its use permitted in official dipping for scab on sheep.

Let us quote you on dipping tanks.

**W. E. Minor & Co.**

800 Long Ave., CLEVELAND, O.

Used and endorsed by the Ohio State University.

**Registered Double Standard Polled Durhams**

**FOR SALE**

*Two very good yearling bulls for sale cheap*

**J. E. RUSSELL, Sidney, O.**

**The McDonald Hardware Company**

1204 NORTH HIGH STREET

Citizens Phone 5746—Bell Phone, North 1983

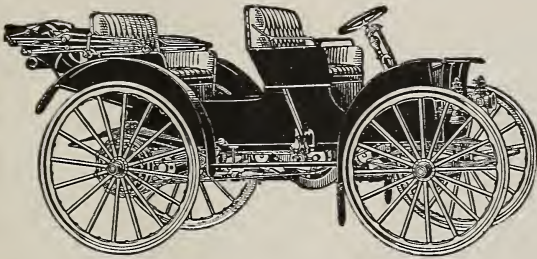
**DISCOUNTS TO STUDENTS**

Please mention THE AGRICULTURAL STUDENT to advertisers.



---

# International Auto Buggy



**For Business  
or Pleasure**

## **You'll Arrive Where You're Bound When You Start in this Car**

It is the leading car for country-road travel. Up hill and down, over all kinds of roads, you go safely and rapidly as well as pleasantly.

Its high wheels and powerful driving mechanism especially fit it for the kind of service that puts the low automobile out of business.

It is under as perfect control as the highest priced automobile. You can go at any speed you like, two to twenty miles an hour. There are no tire troubles because the tires are solid rubber. You have the least concern about fuel supply or operating expense. The Auto Buggy carries a supply of gasoline sufficient to last for a journey of 75 to 100 miles.

It is something to be able to go at a moment's notice, without the trouble of hitching up or the care of horses. The Auto Buggy, with or without top, and with single or double seat, enables you to go alone or with your family in a conveyance you will be proud to ride in.

Call on the International local agent and get a catalogue and let him demonstrate this wonderful country road car for you. Catalogues also sent direct from the home office on application.

**INTERNATIONAL HARVESTER COMPANY OF AMERICA, CHICAGO, U. S. A.**  
(Incorporated)

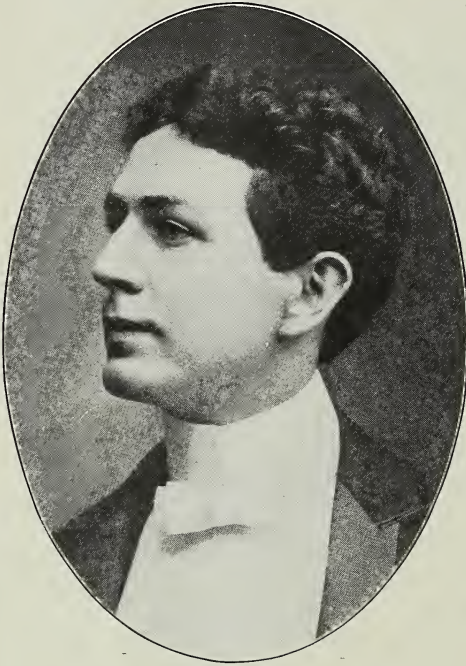
---

SEASON 1909-10

*To Those Who Neglected to Learn to Dance:*

# Prof. W. J. Rader's Academies of Dancing

Will organize beginners classes as follows:



## Winter Pavilion

Located on Neil Ave., between Goodale St. and Poplar Ave. Open Tuesday, Friday and Saturday evenings.

Operated on Summer plan.

## High St. Academy

199½ S. HIGH ST.

Phones: Auto 3456; Bell 5877

Will organize a beginners' class Wednesday evening, Jan. 5th, 7:30 o'clock.

## Neil Ave. Academy

647 NEIL AVE.

Phones: Auto 4431; Bell 6189

Will organize a beginners' class Friday evening, January 7th, 7:30 o'clock.

## New Oak St. Academy

827 OAK ST.

Phones: Auto 4431; Bell 6189

The Academy has been rearranged for functions of all sizes and is complete in every respect.

### TUITION.

Gentlemen, per term of 10 lessons \$4.00  
 Ladies, per term of 10 lessons... 3.00  
 Private lessons, \$1.00 per lesson;  
     six lessons ..... 5.00  
 Private lessons can be had afternoons or evenings.

Tuition can be paid \$1.00 per week until paid. The Waltz, Two-Step, Three-Step, Columbus Minuet, Arch Gavotte and Rye Waltz taught in one term.

*Academies and Pavilion can be secured for private parties, clubs dances, Fraternity hops, etc.*



BARNEY & BERRY

# BARNEY & BERRY *SKATES*

MAKE THE BEST POSSIBLE  
**CHRISTMAS GIFTS**

If your skates are not quite up to date, let somebody know that you would like a pair.  
Your friends will appreciate such a gift. Write for our catalog showing the complete line, and your dealer will be glad to supply your requirements.

**BARNEY & BERRY,**  
170 Broad St.      Springfield, Mass.

# TYPEWRITERS



All makes sold and rented one-half price and less.  
Guaranteed.

## THE TYPEWRITER EXCHANGE

25½ North High Street

Citz. Phone 7119

Bell Phone 1771





TOP PRICES

## THERE'S ALWAYS ROOM AT THE TOP

The question is -- how  
to get 'em there. Our  
"ladder" makes it easy.

It's all in the SALESMAN-  
SHIP. Try our brand of selling  
service. It has pleased and  
profited thousands of live stock  
feeders and shippers, and will  
do likewise for you.

# Clay, Robinson & Co.

Live Stock Commission

Chicago South Omaha Kansas City South St. Joseph Denver  
Sioux City South St. Paul East Buffalo East St. Louis



# CONTENTS



	Page
NATURAL BRIDGE, KY. ....	Cover
FRONTISPIECE—O. S. U. BARNS.....	6
HUMUS AS A SOURCE OF SOIL FERTILITY— Prof. V. H. Davis .....	7
HOLSTEIN-FRIESIAN CATTLE— M. A. Bachtell, '11.....	11
THE TRIP TO THE INTERNATIONAL— James F. Walker, '12.....	14
HISTORY OF AGRICULTURAL FAIRS— E. H. Mickle, '11.....	16
OHIO STATE IN THE JUDGING CONTEST.....	18
AGRICULTURE IN VERMONT— G. E. Story, '10.....	21
EDITORIAL PAGE .....	22
NEWS NOTES .....	23





O. S. U. BARN.

# THE AGRICULTURAL STUDENT

---

Vol. XVI. OHIO STATE UNIVERSITY, COLUMBUS, DECEMBER, 1909

---

Number 3

## Humus as a Source of Soil Fertility

Prof. V. H. Davis

To my mind the relation of humus to plant growth is a problem which has to do with the fundamental principles of any and all forms of farming and if they were better understood the question of the unproductivity of many farm would be solved. The term humus is applied to a large class of compounds derived from the decay of organic matter, or former animal or plant life. These materials undergo decomposition in the soil, the final results of which is the disappearance of these substances leaving only a few gases and a small amount of mineral matter. When this organic matter is in its intermediate stages of decomposition it is known as humus.

From the very earliest times farmers have attached great importance to humus as a factor of soil fertility. It was early observed that the application of the excretions of animals made the soil highly productive, but this result was usually attributed to the direct addition of plant food. With the advent of commercial fertilizers less attention was paid to manure because the farmer thought that it would be just as well to add the plant food in this form. The failure to get returns from large applications of commercial fertilizers when applied alone and the obtaining of almost universally good crops when applied to soils having large amounts of decaying vegetable matter shows conclusively that these organic manures

must have some effect other than the mere addition of plant food.

All of our soils, whether they be sandy, clay or loam, are derived from and made up of only two materials—rock in a more or less fine state of division and organic matter in various stages of decomposition. Soil free from finely divided rock lacks body and firmness. Soil free from organic matter lacks porosity and life. We say such soils are dead. While we find these two constituents in varying proportions, the organic matter is the only likely to be deficient in cultivated soils.

Nature adds organic matter to the soil by growing plants upon it, and incorporating their remains in it. The larger the crop grown on the soil under natural conditions the richer it becomes. Every one knows that woodlands or pastures almost always give better crops than soils which have been cropped or lain fallow for a number of years, although the total amount of the plant food may be decreasing all the time. Why, then, do soils so readily become exhausted when cultivated for even a brief period? Take for example a piece of native woodland. The plants, through their roots, are taking up large quantities of the mineral elements from the soil and building them into plant tissue in the stems, branches, and leaves. While considerable quantities of these materials are returned to the soil by the falling of leaves and small branches



each year, yet the greater per cent. of the elements removed from the soil are permanently locked up in the tissues of the plant. In case of annual plants that die back to the ground each year no elements except the carbon taken from the air, and with some plants nitrogen, are added to soil. The plant simply returns to the soil what it received from it, yet the soil continues to get richer and richer each year. Under cultural conditions man uses the organic products of the land, little if any of the plant being returned to the soil. The soil tends to become hard, heavy and lifeless and after a time an examination of the soil would show it to lack humus.

The decline in the crop producing power of many soils, then, is due to a loss of the partially decomposed animal and vegetable matter in the soil known as humus.

A virgin soil or one recently cleared may show a high state of productiveness for a number of years after it has been brought under cultivation. Gradually, however, a decline in fertility is seen, slight at first but more marked after several years. Observation has shown that with these methods of farming in which grasses form an important part in the rotation, especially those that leave a large residue on the soil, the decline in the productive power of the soil is much slower than where crops like corn, wheat, cotton or potatoes are grown continuously, in spite of the fact that the former crops remove more of the nitrogen, potassium and phosphorous than corn, cotton, wheat and potatoes when grown continuously.

If it were merely a question of the addition of mineral elements to soil that could easily be done by application of Commercial Fertilizers. But the addition of Commercial Fertilizers will not always restore fertility. Perhaps some

of you from your own personal experience know that where commercial fertilizers are depended upon to produce paying crops it requires constantly increasing quantities each year until after a time even these large amounts are applied at an actual loss. The idea is quite prevalent among farmers that commercial fertilizers are injurious to soils and from my own observation I believe there is a sense in which it does injure the soil. The addition of plant food to relatively poor soil makes the growing of crops possible. Practically all of the crop is removed, nothing is added to the soil in the way of vegetable matter and it becomes hard and lifeless. It plows up cloddy, runs together and bakes badly with rains, and if surface is rolling is likely to wash badly. In other words, the addition of plant food has made it possible for us to more thoroughly exhaust the humus of the soil.

The loss of humus involves a loss of nitrogen, one of the elements composing humus.

Humus, as ordinarily obtained from the soil, contains from three to twelve per cent. nitrogen. Since, therefore, nitrogen is one of the prominent constituents of humus, it is easily understood how a loss of humus results in a loss of nitrogen, and inasmuch as nitrogen is one of the important elements of plant food the effect on plant growth will be seen.

Most, if not all the changes that organic matter undergoes in the soil, are the results of the action of microscopic organisms. Nitrification, or the change of organic nitrogen into nitrates and its opposite, denitrification or the reduction of nitrates into gaseous nitrogen, besides many other changes that might be mentioned, are illustrations of the work of these minute organisms. Humus furnishes a medium peculiarly adapted to

the activity in these organisms and their work progresses slowly without its presence. This is one of the most important natural provisions for rendering the inert soil fertility to plants and without the presence of vegetable matter in the soil these processes may be wholly or partially checked.

The loss of humus results in a decreased power of the soil to hold water. Soils rich in humus not only absorb more water but hold it more tenaciously than one poor in humus. This is one of the important differences between a soil rich in humus and one poor in humus. A soil which by long cultivation has lost half its total humus will show a loss of 10 to 25 per cent. of its water-holding power. This decaying vegetable matter acts as a sponge holding large quantities of water and at the same time holding the particles of soil apart, admitting air which is just as essential to the roots of most plants as it is to the leaves. Water falling on the surface soaks into the soil instead of running off the surface. Humus is an important factor especially in sandy soils in assisting capillary rise of water to the roots of plants. In a mixture of sand and humus water will rise much more rapidly than in sand alone. Humus makes clay soil dryer and sandy soil wetter than they would otherwise be.

Almost everywhere the question of the supply of water for plants is of primary consideration. While we usually have a sufficient amount of rainfall during the year to produce a good crop, we do not get it at the right time, and almost invariably there is a period of drought when plants suffer from lack of moisture. The question of holding the extra amount falling at some seasons of the year and making it available to plants when the rainfall is insufficient is the all-important one with the farmers.

Humus increases the temperature of the soil. In breaking up the organic compounds there is a certain amount of heat set free, small indeed, but yet sufficient to decidedly increase the soil activities. Application of humus forming materials as manures has frequently been observed to raise the temperature of soil nearly a degree. Humus also gives soil a darker color, thus causing it to absorb more of the sun's heat.

Farm manures are not only valuable for the elements of plant food they contain, but also for their power of unlocking the fertility of the soil.

Besides being a reservoir of nitrogen, humus is an indirect means of supplying the plants with other fertilizing constituents. The decaying vegetable matter sets free a number of organic acids which dissolve the mineral elements in the soil and combine with them, forming compounds characteristically rich in potassium and phosphorous. Another of the products of decay is carbon, which combines with oxygen to form carbon dioxide, one of the best solvents known in nature. This makes available quantities of the mineral elements in the soil.

#### MEANS OF MAINTAINING HUMUS.

On account of variable compositions of humus it is impossible to state the definite amount which should be present in all soils. Under certain conditions large amounts may be detrimental and smaller amounts may give better results. But in good soils, well drained, it is safe to conclude that soils as a rule will be benefited by these systems of culture which conserve or increase the humus content.

The three most important means of maintaining the humus of the soil are: (1) The liberal use of well prepared farm manure. (2) Green manuring, (3)

Rotation of crops. All three methods may be advantageously combined.

Barnyard manure is the first source of humus to be considered. Upon almost every farm large quantities of manure, straw, hay, etc., are wasted or allowed to decay where they will do the least good. Every thing in the way of animal and vegetable products possible should be carefully preserved and returned to the soil. In many sections of the country the preparation of manure is a problem not yet satisfactorily solved.

Manures have an additional value on account of the relatively high amount of plant food they contain. This is reversing the usual order of things, but I firmly believe that by far the greater value of manure as a fertilizer comes from it as a source of humus, affecting the mechanical and chemical conditions of the soil, the plant food directly added being of secondary importance.

Humus materials in soil may be greatly increased by the addition of muck in stables as absorbents, when available for the purpose.

Green manuring consists in growing some crop with the idea of returning it entire to the soil. Such crops may or may not be considered as cover crops. The latter has the additional purpose of protection during a part of the year. Clover and plants of the leguminous family are more suitable as green manure crops than any others because in addition to supplying an abundance of humus-forming material they add to the soil large amounts of nitrogen taken chiefly from the air.

Where land is cheap and labor and fertilizers are expensive, green manuring will doubtless be the best method of maintaining humus, but when land has a high value and labor is cheap it is bet-

ter to feed these crops to live stock and use the manure. When the lands have become very poor, however, it is practically impossible to get a stand of most of the leguminous crops and it becomes necessary to grow some other crop on the soil first or manure it.

The following plan may be followed: After an early cultivated crop, sow rye and plow under early next spring. A fall crop of sowed corn or oats or even a growth of weeds (nature's cover crop) may be turned under and after a while a clover crop may be grown successfully. From this time on, with plowing and cultivating done in a timely manner and a crop of clover turned under every three or four years, little difficulty will be experienced. There is no way of finding out the kinds of crops best adapted to your locality except by trying them for one's self. In addition to this, all manures of the farm should be saved and judiciously applied to the soil.

Rotation of crops is another means of training the humus of the soil. The general laws which apply to the rotation of crops are in perfect accord with the conservation of soil humus. Methods of farming most destructive to soil humus are continuous grain cropping without manures and the cultivation of food crops as corn, cotton or potatoes, while methods which increase soil humus such as the growing of grass crops and dairy and stock farming result in large productions of manure. If the above crops are to be grown successfully it is absolutely necessary to have some system of rotation, providing for one or more years of pasture, the returning to the soil of at least one crop in the form of a green manure (preferably a leguminous crop), or a liberal application of farm manure.



## Holstein-Friesian Cattle

M. A. Bachtell

On the western shore of Europe, stretched between the 51st and 54th parallels, extend the stalwart dikes of Holland. They protect from the mighty ravages of the sea a country, small in area but fertile in the extreme. In that country drought is unknown, for if the rains fail all the people have to do is to open the gates of the ocean a little and the refreshing water pours in and spreads broadcast over the land. As a nation Holland has made her mark in the world and as a dairy country she has also attracted world-wide fame. Here is the home of the large black and white cattle which we in this country know as Holstein-Friesians. Although common over a great extent of territory they are most abundant and pure in the provinces of Friesland and Drenthe in northern Holland. The word Holstein refers to a small province in Germany where black and white Dutch cattle are extensively bred. The name Holstein-Friesian is not used in Holland and there is a feeling among some American breeders that if the word Holstein were dropped in this country it would give a more appropriate breed name.

The history of the Friesian people began about three hundred years before the Christian era. Even at that remote period they were somewhat famous for their cattle and dairy products. For two thousand years the practices of lodging, feeding and tending these cows have not varied much and this conformity to a definite plan has given their cattle a breed form and a prepotency probably unsurpassed by any other breed in the whole world. The Dutch dairy farmer is a practical man

in many ways. He is not led astray by fancy points but, looking to the utility side alone, he is extremely careful about the milking qualities of his breeding cattle. Nowhere do we find cattle receiving more careful attention or kept with a greater degree of cleanliness. Bathed, combed and brushed, they are as clean as the members of their owner's family. In winter they are kept under the same roof as the family, often separated from them by only a single partition. This custom has undoubtedly come down from feudal times, when it was practiced as a means of protecting the animals from neighboring tribes. In the stables they are arranged not only according to size but also according to color effects in order to favorably impress any chance buyer that happens along. Once stabled for the winter they are not taken out until the following spring and then, not until the weather is such that they can remain for the entire summer.

The milking is done in the field where the animals are tethered. If the weather is changeable the cattle are covered with warm blankets. Upon the heraldic shield of Holland two lions are represented. These might be replaced by two black and white cattle, for the mass of the people about worship them. The children are brought up with almost parental reverence for them. Indeed, more attention and care often are lavished on the cattle than on the children.

The introduction of Holstein-Friesian cattle undoubtedly dates back more than two hundred years. The first cattle were owned by the early Dutch settlers of New York. Later on others

were brought over from time to time, but the value of keeping them pure seems not to have been recognized and their blood was mixed with that of other breeds. The present popularity of the breed in America had this start when Hon. W. W. Cheney made an importation into Massachusetts in 1861. At that time dairying had become an important industry in the Northern States and Middle West and the time was propitious for the introduction of a breed with the characteristics of these cattle. No breed ever spread more rapidly. The skill and enterprise of the American breeder found in these cattle, with their hardiness, their freedom from hereditary diseases, and their plasticity for adaptation, excellent material upon which to work. The true representatives of the breed are large and vigorous animals, good feeders, having an assimilative capacity that economically turns their food into milk. Profitable dairy animals are those that can digest and transmit the roughage of our farms into that most nutritious and valuable of all foods, namely: milk. Such animals the Holstein-Friesian cattle certainly are and that is the main reason of their growing popularity. Holstein-Friesians have a long period of lactation. Moreover they have to a marked degree the hereditary quality of imparting their milking characteristics to their offspring. This quality is a valuable trait, because each cow has her own certain composition of milk as surely defined as any other constitutional feature. This aids the breeder in starting a herd, because he may select the progeny of high-testing dams only, and expect them to furnish milk of more than ordinary quality.

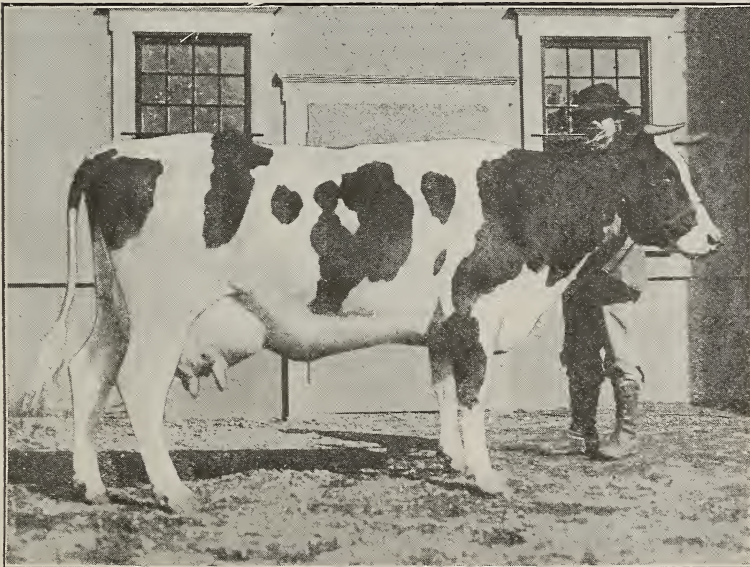
If there is a weak spot in the Holstein-Friesian breed of cattle it is in the composition of their milk, which aver-

ages rather low in per cent. of butter fat. The laws of our states and the epicurean tastes of our people demand that milk contain this constituent in not less than a certain per cent. The milk secreted by some cattle of this breed falls below the limit fixed by law, which is usually 3 per cent. of butter fat. On the other hand, many modern Holstein-Friesian cattle are producing milk testing between  $3\frac{1}{2}$  per cent. and 4 per cent., while a few are in the 5 per cent. class. Although the milk as an average is rather thin, still it is secreted in such large quantities that the amount per cow of butter fat secured is larger than is obtained per cow from other breeds whose individuals give milk testing higher but secreted in smaller quantity. By selecting sires and dams coming from families yielding milk superior in quality and quantity great results may be expected. But the breeder must not forget type in his pursuit of higher fat percentages. Greater finish and refinement have been effected by the change of environment from the lowlands of Holland to the United States, but their size, which the official herd book specifically states to be larger, remains and must remain if the breed is not to deteriorate and if phenomenal yields are to be secured. Phenomenal yields have been secured, for several members of this breed have produced more than 25,000 pounds of milk in one year and one cow, Grace Fayne 2d's Homestead, is queen of buttermakers, she having produced 35.55 pounds of butter in seven days. But every breed of cattle that lays any claim to dairy superiority has its phenomenal cows with marvelous milk and butter records; every breed has also its worthless ones. It would be manifestly unjust to take the latter class as the true representatives of the breed and equally im-

proper would it be to try to impress the public with the idea that such phenomenal cows are the true exponents of the breed.

According to travelers through Holland no true lover of dairy cattle can fail to be impressed with the sights there seen; numerous cattle tethered over the green fields, with the herds

separated not by fences but by ditches. He may return to his home and still be convinced that another breed is better for his purposes, but if he is honest he will not fail to utter his admiration for the black and white cattle. No breed appears more picturesque against a background of green fields or is more emblematic of rural wealth and content.



GRACE FAYNE 2ND'S HOMESTEAD, PURE BREED HOLSTEIN  
WORLD'S CHAMPION COW. 35.55 LBS. BUTTER IN 7 DAYS



## The Trip to the International

James F. Walker

The International Live Stock Show of this year was visited by the University party from Nov. 28th till Dec. 1st, inclusive. Under the escort of Prof. Shields the party left Columbus at 7:30 Sunday morning over the Penna. Lines. As the rear coach was reserved for our party there was excellent opportunity for observation, and the day being fine the ride across western Ohio, central and northwestern Indiana, and a small section of northern Illinois furnished adequate entertainment for the crowd. Arriving in Chicago at 5:00 P. M., we were at once piloted to the Kaiserhof Hotel on South Clark Street, where we learned of the good work of our Judging Team in the Student Contest the day before.

Eight o'clock Monday morning found a party of about twenty-five eager students ready to start to the Show. A ride of twenty minutes on the South Side Elevated brought us to the Show Barns and Amphitheatre which are located at the Stock Yards. The chief events for that day were the judging of College and Experiment Station Stock and of Belgian horses. We at once became interested and watched this work for a good part of the day. The horses and swine claimed most of our attention, though the exhibits of cattle and sheep for that day were by no means uninteresting. The members of the party were not required to keep together all the time, however, and this gave each person opportunity to visit the stables and show pens and see those exhibits which most interested him. One very soon realized the vast extent and supreme quality of the Show, and

recognized the importance of studying the subject-matter at hand.

That evening we attended the entertainment in the Amphitheatre. Though not so instructive as the judging of the day, these evening performances were never lacking in inspiration and amusement. On this occasion there was a musical program by the band at the same time operations were going on in the ring. The performances in the ring consisted of judging draft horses to the halter, a parade of cattle headed by Scotch Pipers, the judging of a ring of light horses in harness and under the saddle, a parade of draft horses, a Knights Jousting Tournament, an exhibition of ponies in harness, and lastly, exhibitions by the Packers' six-horse teams, Swifts, Armours and Morris' big teams with their splendid outfits and proud drivers trotted into the ring at the same time. The cutting of circles and of figure eights was done with as much alacrity as if but one team were being driven. All performances were gone through with on the trot and within very small limits of space. "The eating of the leaders from the tail-board" was a feat very successfully performed, especially by Swift's grays.

After having spent Monday evening as described, Tuesday morning found us again on the grounds to watch the judging. The carload lots of feeder cattle, fat cattle, fat sheep, and fat swine were judged in the Stock Yards on this day. Competition in the show rings went steadily on and was ever new, entertaining and instructive. This was the day of Percheron horses, and it is said that a finer exhibit was never shown.

The imported horse "Carnot," owned by J. Crouch & Son, Lafayette, Ind., took the championship of his breed and has since sold for \$10,000.00. On this day also the Grand Champion steer was chosen. The much coveted purple ribbon went to King Ellsworth, a two-year-old Angus from the Kansas Agricultural College. He has since sold at auction for \$18.00 per 100.

The other events of the day were too numerous to discuss at length, but suffice it to say that the time was profitably and enjoyably spent. The evening was again passed by watching the performances in the Amphitheatre, the program being of the same general character as that of the night before.

Wednesday morning, under the escort of Prof. Plumb, the party visited Armour's Packing Houses. This may well be considered one of the most instructive events of the whole trip. By a special guide we were shown through the general offices and clerical department, the pork and beef departments, and the refrigerating plant. The butchering of hogs and cattle was of particular interest, but no more instructive than the canning rooms, and the refrigerating plant. The large refrigerators filled with thousands of carcasses can not but make an impression on the observer. The killing capacity of this one house alone is 15,000 hogs and 4,000 cattle per 10-hour day. The employees number 23,000.

After leaving the packing houses we visited the Stock Yards in general, among other things going to see the Grand Champion load of Shropshire lambs exhibited by Mr. Dan Black of Ohio, the Grand Champion load of Berkshire hogs, and also the prize load of Shorthorn cattle. Wednesday afternoon was spent in the Clydesdale ring, at the Shorthorn Sale, and other places of interest about the Show. We left Chicago at 9:45 that night.

Thursday morning found us back at school, tired and somewhat dejected over the prospect of the work we had to make up. Despite this fact there was not one in the whole party who would not have made double the sacrifice rather than to have missed the trip. Indeed the value received from such an outing is hard to estimate. One feels he has had a new vision of the whole Live Stock Industry, and indeed of life in general. To supplement our work here at school by meeting Animal Husbandry students from other States, by seeing and examining some of the best animals the world affords, and by questioning stock breeders themselves and hearing first hand what has been preached in the class room, makes one realize that he is not living in a world of theory but of reality. One can not but say to himself, "What these men have done I can do, and more." Go, my fellow students, and see what lesson the Show has for you.



## History of Agricultural Fairs

The word fair originally meant: a place where things were bought and sold; a market for goods. We have records of such fairs being held back as early as the third century. They were held in England and various countries of Europe. At that time transportation and means of getting news from other parts of the country were very poor. About the only modes of travel were by horse and on foot, and the people did not gather in great throngs as they do in our cities today, except at their religious festivals. At these, however, people collected from far and near, and it became the custom to hold fairs at such times. These fairs often bore the name of the Saint in whose honor the festival was being held, and often all or a certain per cent. of the sales went to the church.

To-day in the United States, the word "fair" has held very little of its original meaning. Sometimes we hear a church bazaar or social called a fair, even today, but the term has come to bear a far higher meaning, and now it more frequently designates a collection of superior products, which are exposed, not for sale, but mainly for public inspection, for careful examination by experts as to their respective qualities, and for educational interests.

The agricultural fair in the United States dates back to 1810. In that year Elkanah Watson, an energetic merchant of Albany, New York, a man who liked to see the best interests of the people advanced, retired from active business and removed to his farm near Pittsfield, Massachusetts. Here he conceived the idea of interesting the farmers of Berkshire County by holding an exhibition of improved breeds of cattle and su-

perior products of the soil. He saw that it was to the farmer's interest that he raise the best animals and crops, and he thought that this would be a great incentive along those lines. Prizes were awarded for the best. The first "agricultural fair" was a success, but Mr. Watson saw where it could be enlarged and improved, and he called on the citizens of Boston for financial aid. These people, however, were like all other people, afraid to take hold of a new project—a project that had not been tried and fully tested. Even ex-President John Adams replied curtly to Watson: "You will get no aid from Boston: commerce, literature, theology, medicine, the university, and universal politics are against you." This was a case of "throwing cold water on a duck's back." Like it was with Fulton and his Clermont. When his friends saw his crude steamboat they said, "It may run down stream, but just wait till it starts back." What was their astonishment when the boat steadily forged up stream? Watson, although public sentiment was against him, was not to be defeated. He knew he was right and, knowing this, nothing could stop him. He redoubled his efforts at home and for several years annual fairs were held.

In 1815 Mr. Watson returned to Albany and began to organize agricultural societies in neighboring counties. His influence and integrity led to the passage of an act by the Legislature of New York in the year 1819, which appropriated ten thousand dollars annually for six years for the promotion of agriculture and family manufactures. This sum was to be divided among the agricultural societies of the several counties in proportion to their population, pro-



vided each county raised a like amount.

In 1829 the American Institute began holding their annual fairs throughout the United States, for the encouragement of the agricultural and manufacturing arts. These fairs did much good and a number of the early manufacturers were much benefited, among these being Cyrus B. McCormick.

In 1832 a movement, largely due to interest created a few years before by Watson, was started which ended in a State Agricultural Society being formed in New York State, and by its influence a similar law to that one of 1819 was passed in 1841, appropriating a sum of eight thousand dollars for advancement of agricultural interests.

At present each county agricultural society is required to make a report annually to the state board or society, which in turn embraces the essential parts of the whole in its report to the Legislature. Nearly every State in the Union now has its county and State

agricultural societies, which hold fairs annually.

A few years after the first organization of the kind in New York State, Ohio took up the idea. On February 22, 1819, the people of Washington County, Ohio, and Wood County, West Virginia, formed an agricultural society. They held their first fair at Marietta in 1826. It is recorded that "The court house served for floral hall, and the street and vacant lots adjacent were used to display the stock." A similar society was formed at Cincinnati in 1819 and this was the first one that Ohio can call her own. In 1846 the Legislature passed an act providing a State Board of Agriculture. This board held its first State Fair at Cincinnati in September, 1850. Since then the Board has held fairs annually and up until 1874 it was a movable fair, being held at Dayton, Cincinnati, Toledo, Springfield, Mansfield, Franklinton, Newark, Zanesville and Sandusky. Since 1874 the fair has been held at Columbus.



## Ohio State in the Judging Contest

Ohio State can well be proud of the record made by her representatives in the Students' Judging Contest at the International. We have the honor of having in our midst the best student judge in the United States and Canada. L. L. Mowls headed the contest with a score of 1036 points out of a possible 1200.

Ohio stood third in the contest with a score of 4722 out of a possible 6000. The Iowa team took first, winning the trophy for the second time. If they win another year the trophy belongs to them. They scored 4940 points. Ontario won second place with a score of 4741. The teams this year broke all previous records. The highest previous record made in the contest was a score of 4580. This year Ohio State beat that record by 142 points. The highest previous record on individual men was 922 points. This year Mowls exceeded that

score by 44 points, with four other men between him and that score.

Ohio took first place on sheep and would have taken first on horses but for an error of one of the clerks of the contest. Dix placed the ring of Belgian Statllions correct, and was only given 25 per cent. for his reasons. On horses Missouri only beat us by 8 points. We had high man on sheep and horse judging, and won one of the \$250 scholarships awarded by Armour.

The following is the standing of the contestants:

### Grand Totals by Teams.

1. Iowa .....	4,940
2. Ontario .....	4,741
3. Ohio .....	4,722
4. Kansas .....	4,663
5. Nebraska .....	4,661
6. Missouri .....	4,622
7. Texas .....	4,430



TWO-YEAR-OLD ANGUS, FOXY, OWNED BY O. S. U.

**Standing of Individual Men.**

(Score out of a possible 1,200.)

1. L. L. Mowls, Ohio.....	1,036
2. O. C. White, Ontario .....	1,023
3. M. G. Thorneburg, Iowa....	1,017
4. J. I. Thompson, Iowa.....	999
5. O. D. Baker, Iowa.....	995
6. R. H. Camp, Nebraska.....	976
7. R. W. Cassady, Iowa.....	974
8. Thomas Phillips, Ohio.....	969
9. W. R. Reek, Ontario.....	964
10. T. E. Clark, Kansas.....	964

The other Iowa man, Howard Vaughn, took thirteenth place with a score of 955.

**Rank of Teams with Classes of Stock.  
Cattle.**

(Score out of a possible 1,500.)

Iowa .....	1,398
Ontario .....	1,288
Kansas .....	1,283
Ohio .....	1,267
Texas .....	1,236
Nebraska .....	1,211
Missouri .....	1,184

**Horses.**

Missouri .....	1,205
Ohio .....	1,197
Ontario .....	1,185
Iowa .....	1,167
Kansas .....	1,144
Nebraska .....	1,142
Texas .....	1,119

**Sheep.**

Ohio .....	1,253
Ontario .....	1,238
Kansas .....	1,231
Missouri .....	1,213
Nebraska .....	1,213
Iowa .....	1,200
Texas .....	1,143

**Hogs.**

Iowa .....	1,175
Nebraska .....	1,095
Ontario .....	1,030
Missouri .....	1,020
Kansas .....	1,005

Ohio .....	1,005
Texas .....	945

**Premiums Received by O. S. U. Stock.**

Ohio not only made a good showing with her judging team at the International, but she also did well with her exhibits of stock. The winnings are enumerated, viz:

**Fat Cattle.**

Ohio Griselda II—Red Polled, 1 year and under 2, first.

Ohio Boy—Shorthorn, 1 year and under 2, fourth.

Ohio Czarina—Grade yearling, fifth. (Second on foot in carcass contest.)

Foxy—Aberdeen-Angus, 2 years and under 3, third.

Scottish Lad—Galloway, 2 years and under 3, fourth.

Rob Roy—Shorthorn calf, third. (Owned by the University, shown by Mr. Gerlaugh.)

**Fat Hogs.****Berkshire.**

Barrow over 12 and under 18 months, second and third.

Pen of 3 barrows over 6 and under 12 months, third.

Pen of 3 barrows over 12 and under 18 months, second.

**Duroc-Jersey.**

Pen of 3 barrows over 6 and under 12 months, second.

Our Yorkshires were without competition.

**Fat Sheep.**

Shropshire Lamb—Open class, third.

Shropshire Lambs—College Class, second and third.

**General:** Three of our fat cattle were entered in the carcass contest; Ohio Griselda II, Ohio Czarina, and Scottish Lad. The only prize resulting from these entries was Scottish Lad taking fourth. Five of the eight cattle taken to the show were sold. The prices varied from \$7.75 to \$13.00.



Our hogs, though receiving more or less favorable notice, were not fat enough to be "top-notchers."

On our pen of five sheep we won a total of \$67.00. Part of this money was won under hot competition, notably by

the University of Wisconsin. For the best general exhibit of cattle, sheep, and swine, consisting of five cattle under three years, five sheep under two years, and five hogs under one year, we ranked second, Iowa being first.



YEARLING RED POLLED, OHIO GRISELDA II, OWNED BY O. S. U.

# Agriculture in Vermont

G. E. Story

In a short article like the present one, it is impossible to more than outline in a general way the conditions which exist in a State.

Vermont is a small mountainous State, having a population of only 350,000. The Green Mountain Range divides the State from North to South, and most of the best farming land lies on either extreme side of the State; to the East in the Valley of the Connecticut River, and to the West in the Champlain Valley.

Although very unpretentious when viewed upon the map, Vermont has a national reputation for marble, maple sugar, Morgan horses, wonderful scenery and great men.

The hills in the central part of the State offer fine pasture for sheep. And in the days of the Merino "boom" Vermont was noted for her excellent sheep, many of which found their way to Australia.

At the present time, sheep-raising is of secondary importance, partly due to lack of State laws which will protect the flocks from worthless curs, and partly to the fact that dairying is considered more profitable.

Dairying is the one system of farming which is well-nigh universal throughout the State. The great dairy markets are near at hand, several condensaries operate in the State, and more and more milk and cream is sent each year to Boston and vicinity. This, coupled with the fact that the farmers prefer dairying to any other form of animal husbandry, makes Vermont a dairy State.

There are many herds of pure-bred stock owned in the State, some being of great excellence.

Ayrshires have long been associated with Vermont, and there is a growing tendency to favor the Jersey, Holstein and Guernsey.

Still there are only too many indifferent dairymen who think any cow is a cow, and are unwilling to adopt up-to-date methods.

However, thanks to the Agricultural College, with its Winter dairy course, two cow-testing associations formed through the tireless efforts of Prof. Hills, Director of the Experiment Station, and numerous examples of what grit and proper methods will accomplish, dairy conditions are fast improving in the State.

Horses are bred only in a small way for local demand, and are mostly in the general purpose class. However an effort is now on foot to renew the former interest in horse breeding, and once more make the Morgan recognized as a breed native to the State.

Hogs are rarely kept in large numbers for their value alone, as they are here in Ohio, but rather as a means of utilizing by-products from the dairy, and go to supply the local markets.

Rape does well in Vermont and makes a cheap pasture, which together with the milk (skim) produces cheap gains and materially increases the total profits from the dairy.

Skim milk veal is also a way of getting rid of the by-products which during the past two years has attracted quite a bit of attention. During the spring months a return of 40c per hundred for skim milk can often be obtained in this manner.

Fat cattle, by which is meant stock

(Continued on page 26.)

# THE AGRICULTURAL STUDENT

---

A MONTHLY MAGAZINE DEVOTED TO THE  
INTERESTS OF FARMING, STOCK-RAISING,  
DAIRYING AND CREAMERY WORK

---

Published by The Agricultural Student  
Pub. Co. in connection with the Agricultural  
College of Ohio State University.

---

## EDITORIAL STAFF

H. B. McClelland, '10.....Editor-in-Chief  
H. R. Watts, '10.....Business Manager  
R. W. Kelley, '11.....Asst. Business Mgr.

### Associate Editors:

D. C. Mote, '11.           F. S. Bull, '10.  
O. W. Reagin, '10.       P. W. Barnes, '11.  
H. M. Call, '11.         H. C. Hyatt, '11

---

## SUBSCRIPTION PRICE

One year (9 issues) .....	\$0 50
Half year .....	30
Single copies .....	10

Advertising Rates on application.

---

All literary matter should be addressed to  
the Editor; and all business communications  
to the Business Manager.

---

Entered at the postoffice at Columbus, Ohio,  
as second class matter.

---

COLUMBUS, O., DECEMBER 15, 1909.

---

## Editorial

### An Appreciation

The circumstances under which the judging team was developed this year were very favorable to turning out a good team, and the agricultural faculty and student body feel that these should be fittingly acknowledged. Previous to this fall the class in advanced live stock judging had very little training. But they were earnest students and by the willing aid of the numerous breeders they obtained a much stronger grasp of

the essentials of live stock judging. The Agricultural College is vastly indebted to Thos. Johnson & Son and McLaughlin Bros. for allowing the free use of their best animals for instructional work. These and others, including J. C. Williamson, Lee Palmer, W. D. Chery, Jas. R. Bickett, D. R. Hanna, C. O. Judd and Crouch & Son, all aided the students materially in more than one way.

The fairmindedness and candid criticism of O. E. Bradfute, R. C. Watt and William Bell afforded the students an opportunity of analyzing the ideals of these stockmen. It was a pleasure to see these men subject their animals to inspection and criticism. The Agricultural College vividly recognizes her debt to these and other breeders and importers of live stock and she will try to repay them by turning out efficient, active, energetic men, who will uplift the live stock industry of their community and help to place it on a higher plane.

---

One thing needed in the Agricultural College is more spirit. We need more spirit in our work, in our organizations, in our athletics, in our social affairs, and in our publication, The Agricultural Student. We lay emphasis upon the latter because it is of primary interest to us. You can help us make it a better magazine by taking an active interest in it. When one of the Editors asks you for an article, write one and write the best one you can. If you know any news notes which would be of interest to the student body, hand them to one of the staff. Subscribe to the "Student." The price is within the reach of all, and with more subscriptions we can put out a larger and better paper. Last, but not least, don't knock the paper; we're doing the best we can. Be a booster!






---

## NEWS NOTES

---



That Ohio is no small fry in the live stock industry is shown by her winnings at the International just past. In breeding cattle Ohio was well represented by Thos. Johnson & Son, D. R. Hanna, and Carpenter & Ross. This trio carried away many of the ribbons in the Shorthorn breeding classes. In the Fat Cattle classe Carpenter & Ross, Thos. Johnson & Son, J. A. Gerlaugh, F. Hartline, D. Bradfute & Son and M. L. McCoy more than held their own. M. L. McCoy had the Reserve Champion steer. Leet & Sons carried away many ribbons with their Dorset sheep. Ohio's breeding hogs were shown by the Whitehall Farm, Carpenter & Ross and C. W. Hintz. These people almost made a clean sweep in their respective breeds, leaving only a few ribbons by the way-side. The horse industry was ably represented by McLaughlin Bros.

The Agricultural Society, at the meeting Wednesday night, was addressed by Prof. Vaughan, who had for his address The International Stock Show. He was followed by Messrs. Mowls, Phillips and Dix, who gave their impressions of the same. At the close of the meeting forty new members were taken in.

The two-year-old Angus shown at the International brought 12½ cents per lb. The yearling Angus brought 13 cents per lb. The Johnson calf brought 10½ cents per lb., and the Baum Shorthorn steer brought 10¾ cents per lb.

Dean Price spent a day at the International and reports a mighty interesting show.

The following Extension Schools were held during the past week: At New Berlin, Ohio, the subjects taught were Soil Fertility, Crops and Dairying, by Prof. Graham, Vivian and Orneale. Forty-two men attended the course. Twenty-six women attended the home-makers' course in charge of Mrs. Foulk.

The course at Salem, Ohio, Columbi-ana Co., was attended by thirty-five men and thirty-five women. The same subjects were taught. The instructional force consisted of Miss Postle and Messrs. Bear, Wade, Titlow and Erf.

At Lucasville, Ohio, Scioto Co., Animal Husbandry and Horticulture were taught by Prof. McCall and Messrs. Davis and Shields.

The Horticultural and Dairy Special, consisting of four cars over the O., R. & W., was supervised by Messrs. Mooney and Geddis. Prof. Graham presided at both afternoon and evening sessions, introducing Prof. Davis and Mr. Ballou, who gave practical talks on fruit culture. It was agreed that Yellow Transparent, Duchess of Oldenburg, Grimes Golden, Rose Beauty and Ben Davis were the best for this section of the state.

Extension Schools during the week of December 13th will be held at Galion, Crowford Co., and Marysville, Union Co. Animal Husbandry will be taught at the schools.

The Student extends Christmas greetings to all its readers and wishes them joyous holidays which will be long remembered.

## Ohio Allied State Associations

The following is the schedule of the meetings of the Ohio Allied State Associations, to be held in Columbus, January 3-15, 1910:

American Chester White Swine Association, Jan. 3rd, evening.

American Hay Dealers' Association, Jan. 10th, afternoon and evening.

Am. Merino and Delaine Sheep Breeders' Association, Jan. 6th, morning, afternoon and evening.

Banquet, grand combination, Memorial Hall, Jan. 13th, evening.

Judging School, Farmers' Live Stock, Jan. 3rd, morning and afternoon.

Ohio Bee Keepers' Association, Jan. 4th, morning, afternoon and evening.

Ohio Berkshire Swine Association, Jan. 3rd, evening.

Ohio Corn Improvement Association, Jan. 10th, afternoon and evening, Jan. 11th, morning and afternoon.

Corn Show, Jan. 6th, 7th and 8th, evening; Jan. 11th and 12, morning, afternoon and evening; Jan. 13th, morning and afternoon.

Ohio County Fair Presidents and Secretaries' State Association, Jan. 12th, afternoon.

Banquet of Fair Association, Jan. 12th, evening.

Ohio Dairymen's Association, Jan. 5th, 6th, 7th, morning and afternoon.

Ohio Farmers' Institute, Jan. 12th, morning, afternoon and evening; Jan. 14th, morning and afternoon.

Ohio Forestry Association, Jan. 12th, morning, afternoon and evening.

Ohio Grain Dealers' Association, Jan. 10th, afternoon.

Ohio Holstein Friesian Cattle Breeders' Association, Jan. 7th, afternoon and evening; Jan. 8th, morning and afternoon.

Ohio Horticultural Society, Jan. 11th, morning, afternoon and evening; Jan. 12th, morning and afternoon.

Fruit Show, Jan. 11th, 12th, 13th and 14th, morning, afternoon and evening; Jan. 15th, morning and afternoon.

Ohio Jersey Cattle Club, Jan. 6th, evening.

Ohio Live Stock Association, Jan. 4th and 5th, morning, afternoon and evening.

Live Stock Round-up, Board of Trade, Jan. 5th, evening.

Ohio Merino Sheep Association, Jan. 7th, morning and afternoon.

Ohio Millers' Association, Jan. 7th, morning and afternoon.

Ohio Nurserymen's Association, Jan. 14th, morning and afternoon.

Ohio Plant Breeders' Association, Jan. 12th, morning.

Ohio Red Polled Cattle Club, Jan. 4th, evening.

Ohio Sheep Breeders' and Wool Growers' Association, Jan. 7th, morning, afternoon and evening.

Ohio Shorthorn Cattle Association, Jan. 6th, afternoon.

Ohio State Board of Agriculture, Jan. 13th, morning, afternoon and evening.

Ohio Swine Breeders' Association, Jan. 3rd, evening.

Poultry Institute, Jan. 14th, morning, afternoon and evening.

Poultry Show, Jan. 11th, 12th, 13th, 14th, morning, afternoon and evening; Jan. 15th, morning and afternoon.

Vermont, New York and Ohio Sheep Breeders, Jan. 5th, morning and afternoon.

Ohio Horse Breeders' Association, Jan. 3rd, evening.



Merry  
Xmas



## Personal

D. R. Acklin, '08, paid the Agricultural College and his friends a visit November 24.

---

A. R. Moist, '08, is managing a 200-acre dairy and grain farm near Chicago, Ill., and reports everything favorable.

---

E. J. Hoddy, '09, who is now in the employe of the U. S. Bureau of Entomology located in California, will be back among his friends during the holidays.

---

Ohio State University bought at the International one steer calf of J. A. Gerlaugh, Harshman, O., and four purebred Shropshire lambs of J. Lloyd Jones of Canada.

---

Dr. Clarence Clawson, '99, B. S. '00, D. V., visited his Alma Mater December 7th. Dr. Clawson is in the U. S. Bureau of Animal Industry, now located as meat inspector in Texas.

---

W. H. Delatusch, '08, who has been employed on a mule farm in Illinois, has resigned his position and intends locating in Arkansas on a plantation owned by his uncle. The Student extends him hearty wishes for success.

---

President W. O. Thompson paid his first visit to the International this year and declared that to be a grand live stock show and that he found many interesting exhibits. Dr. Thompson is the owner of some fine Percherons and Belgians, and spent most of his time while there looking at the judging going on in the horse ring.

## Curly Coated Pigs

In September last, the Department of Animal Husbandry of the Ohio State University College of Agriculture received from Lincolnshire, England, five Lincolnshire Curly Coated Pigs. These included a boar pig, a yearling sow and three March barrows. These are the first pigs of this breed to have been brought to America. They were a gift to the Ohio State University, through the interest of Mr. Chas. Ed. Williams, Secretary of the Lincolnshire Curly Coated Pig Association. The three barrows are to be shown at the International Live Stock Exposition at Chicago, and two of them will be placed in the carcass test. This is an old English breed, white in color, known mostly in Lincolnshire, England. During the past two years it has been quite successfully shown in England. Good specimens of the breed have a very curly white coat of hair. The head is similar to that of the Chester White, although the ears are somewhat larger and more pendent. Lincolnshire breeders regard it both as a "general purpose" and also as a very superior bacon breed.

The two barrows entered in the carcass contest did very well, everything considered. They dressed out 77.80 per cent. and 77.11 per cent. The highest dresser in this class was a Duroc Jersey hog, 82.54 per cent. The lowest was a Yorkshire, 73 per cent.

PROF. C. S. PLUMB.

---

Owing to the fact of the large number of entries in the Corn Show this year it has been decided to hold the exhibition on the fourth floor of the New Lazarus Building.

---

**Subscribe for the Agricultural Student.**



## The Farm Census

The thirteenth general census of the United States will be taken beginning April 15, 1910. About 65,000 enumerators will be engaged in the work. It is the intention to make this next census the most comprehensive that has ever been taken from the farmer's standpoint. Each farmer is asked to prepare an accurate account of his farm operations for the year ending December 31, 1909. He is also asked to make an inventory of all his farm possessions on April 15, 1910, at the time the taking of the census is begun. The very nature of the farming occupation precludes the probability of the farmers' keeping as accurate an account as do manufacturers and merchants, yet there is no reason why he should not be able to give a reasonable idea of his work. The scope of the farm census may be separated into five groups—personal information concerning the farmer himself; general information regarding the acreage valuation and expenses; a statement of the acreage and yield of farm crops harvested in 1909 and all animal products, that is, dairy products, eggs and live stock sold; an inventory of all stock including poultry and bees on hand April 15, 1910; and miscellaneous information with regard to certain topics not included in the above.

Now every farmer should co-operate with the government agencies in providing the information sought, and not do as many do every year—turn the dog loose upon them. The business side of the farm has been sadly neglected in the past, but it is to be hoped that the future will see as much system and organization on the farm as in the factory. And this document by the help of the farmers will contain that information of farm operations which will materially aid such advancement.

## Agriculture in Vermont

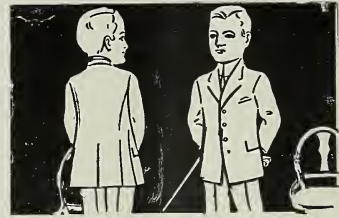
(Continued from page 21.)

from the great beef breeds, are rarely found in the State. This may be accounted for in two ways; first, the difficulty of obtaining "feeders" cheaply enough, and secondly, the Eastern markets discriminate against native beef, making it impossible to realize as much from beef as can be returned from a dairy herd.

Truck raising is a paying venture near the cities and in the vicinity of large manufacturing and quarry districts. As yet the field is not crowded and good prices prevail.

Tobacco is grown to some extent on the Eastern side of the State, but while the quality is good, the region suitable to its growth is limited.

The Western side of the State is natural fruit land, and Grand Isle and Addison Counties annually produce as



**Smart  
Snappy  
Stuff**

... for ...

**\$20.00 to \$30.00**

**Columbus Tailoring Co.**

149 N. High

F. C. RICHTER, Prop.

many and as fine apples per acre as the famous Hood River region of Oregon. The great fault to be found with present conditions is the lack of care used in marketing the crop.

The greatest opening, however, is with small fruit, for it gives good returns with little care, due to the fact that diseases are comparatively rare, also the local market is far from being supplied, a fact that is causing many young men to take up this branch of agriculture.

One enterprising young man is making good, raising beans for the cannery.

The "Noble Hen" has a strong foothold in the State, and each year sees more poultry plants in operation. The Vermont farmers have come to realize that this kind of a "plant" is almost sure to pay good profits if rightly handled.

For side-lines the farmer has his "sugar bush," which in a good year nets him a tidy sum, coming as it does, at a time of year when he can do little else.

Many an owner of stony acres has sat and dreamed of wealth only to find his land valuable because of deposits of marble, slate, etc., worth far more than the crops that could be grown upon the soil.

Abandoned farms are now a thing of the past, for publicity and organized movement have done much to bring in new blood, people who are firmly convinced of the latent possibilities of the supposedly worn-out soil, and of the great future of New England Agriculture. The tide has turned and is now setting strongly toward the State which has given the best of her blood to all States.

MEET ME

at the

# Varsity Barber Shop

*Cigars, Tobacco  
Cigarettes  
Candies  
Pool & Billiards*

E. E. GRABILL, Proprietor  
Bell Phone, North 59

THE HOME OF QUALITY.

# The Union

Announces its showing of  
Adler's, Rochester,

## Fall 1909 Clothes for Men

Suits, Topcoats and Raincoats, Perfect  
in Fit, Faultless in Tailoring, Fabrics  
of the Highest Quality.



HIGH & LONG STS. COLUMBUS, O.

You will always find satisfaction in dealing with advertisers in THE STUDENT.

## Prominent Breeders of Live Stock

We know these breeders to be reliable and safe.

### BERKSHIRE SWINE

The home of LONGFELLOW PREMIER C, 98700. Pronounced by the best judges of America the greatest Berkshire Boar in the world. Stock of either sex for sale by Longfellow Premier C; sows bred to Longfellow Premier C.

A. E. FISHER

Grove City, Franklin County, Ohio.  
P. O. Orient, Ohio.

### Cherry Valley Devon Herd

My Devons are bred for milk and beef qualities. The farmers' cow and no mistake. Call and see my herd and be convinced that the Devon is the best of cattle for beef, butter, milk and beauty.

J. C. SHAW

P. O. Box 537

NEWARK, OHIO.

## Maxwalton - Shorthorns

We breed them, show them, win with them, and sell them at prices to suit all.

CARPENTER & ROSS, .. .. MANSFIELD, OHIO

## OAKLAND SHORT HORNS

The result of the past season's showing at the leading fairs and stock shows is good evidence of the quality and high grade of the Oakland Herd. The calves of

### GLENBROOK SULTAN

the great breeding bull, have been outranked but once in the past season's shows.

Visit the farm and be convinced that the best are found there.

**THOS. JOHNSON & SON**  
COLUMBUS, OHIO

Ralph Postle,

F. L. Postle,

Wayne C. Postle

WHITE-STOCK FARM

SHORT HORN CATTLE

YORKSHIRE SWINE

SHROPSHIRE AND CHEVIOT SHEEP

**F. L. POSTLE & SONS**

FRANKLIN CO., CAMP CHASE, O.

Kindly mention THE AGRICULTURAL STUDENT when answering Advertisers.



# America's Leading Horse Importers

AT THE GREAT ANNUAL SHOW OF FRANCE, 1909, held under the auspices of the Societe Hippique Percheronne at Nogent-le-Rotrou, OUR STALLIONS WON

**FIRST PRIZE IN THE FOUR-YEAR-OLD CLASS**  
and **FIRST PRIZE IN THE THREE-YEAR-OLD CLASS.**

We have for sale THE BEST and will continue to have the BEST PERCHERONS that can be found in France.

## McLAUGHLIN BROS.

Columbus, Ohio.

Kansas City, Mo.

St Paul, Minn.

## BLACKWOOD, GREEN & CO.

### HARDWARE

STOVES AND HOUSE  
FURNISHING GOODS

SLATE and METAL ROOFING

624 NORTH HIGH STREET  
COLUMBUS, OHIO

FRATERNITIES AND BOARDING CLUBS

Always Find Our

## MEATS AND GROCERIES

Strictly First Class

## ABERNATHY BROS.

1609 HIGHLAND STREET

Citz. Phone 16504

Bell, North 857

# See Doc Levison for Fine TAILOR MADE Suits

## HOW MANY OF THESE FACTS ABOUT



**Wyandotte**  
Cleaner and Cleanser



## DO YOU KNOW?

Do you know that it is a real sanitary cleaning and washing powder? Yes, so sanitary that it will not even affect warm milk, and at the same time so harmless that you may use it to wash the finest garment or fabric without the least fear of injuring it.

Do you know that it looks and acts much like borax and like borax it makes no suds and contains no lye?

Do you know it will do more washing and cleaning than either soap or borax and has more uses than both of them together?

Do you know it makes hard water as soft as rain?

Do you know that there is not a place about the home that needs washing and cleaning that Wyandotte Cleaner and Cleanser will not do it so well that you will be surprised that any material could do as much?

Why, if you will try it just once on the family washing the white, snowy, sweet-smelling clothes will tell the story. You will use it next time because YOU know Wyandotte Cleaner and Cleanser will do so many things that, once you learn even a few of them, you will wonder how you ever did your work so long without it.

Just ask your dealer for one of those big 25 cent sacks of Wyandotte Cleaner and Cleanser.

THE J. B. FORD COMPANY

SOLE MFRS, WYANDOTTE, MICH., U. S. A.

This Cleaner has been awarded the highest prize wherever exhibited.

# Martin's Art Studio

703 NORTH HIGH STREET

Will make you better Photos, more life like and better finish than any gallery in the City. We don't charge you for a finely equipped gallery and reputation: we charge a living price and make you the best possible picture. Special rates to O. S. U. students for groups and individual photos. We guarantee all our pictures. Our styles are exclusive.

Try us next time you want photos. Frames Made to Order.

Just South of Buttles Ave., 703 NORTH HIGH ST.

MEN'S FURNISHINGS,  
DRAWING INSTRUMENTS  
and MATERIALS,  
STUDENTS SUPPLIES.

**MADDOX & KILGORE**

HIGH ST., OPP. EAST 11th AVE.

Try **Yeager, the Tailor**

ALWAYS RELIABLE AND UP-TO-DATE.

395 SOUTH HIGH STREET.

Please mention THE AGRICULTURAL STUDENT to advertisers.

# Xmas Photos

What more acceptable or appreciated present can you make than a photo of yourself? A portrait is something you do not have made often, and you should have the best. From now until Xmas we are making special inducements.

Water Color, and Hand Stippled Crayon Portraits from life or any old photo.

The largest, finest, and without question the best equipped gallery in America for producing the best in photography.

—THE OLD RELIABLE—

*Baker Art Gallery*  
COLUMBUS, O.

## “THE COLLEGE INN”

“DAVE” WARWICK, Proprietor.

**Bowling, Pool, Billiards, Cigars**

**FREE SOUVENIRS**

RESULTS OF ALL GAMES POSTED

# THE DIFFERENCE

between the man who is careless in his attire and the man who dresses neatly and becomingly, is a matter of self-respect, but it is that self-respect which lifts him over the heads of others, socially, fashionably, commercially and professionally. We cater only to the man who respects his appearance and Fashion's embellishments.

**The “So-Different” Tailorey**

1541 NORTH HIGH ST.

If you saw it in THE STUDENT, tell the Advertiser so.



THE CHITTENDEN IS STILL OPPOSITE

# B. FROSH & SON, TAILORS

204 — NORTH HIGH STREET — 204



## The Line Is Drawn

Between the old style  
mechanically balanced  
cream separator  
that soon runs  
rough, turns  
hard, skims  
poorly  
and

### The Self Balancing "Simplex"

That always runs light  
and quietly and therefore  
always skims clean. It is  
the only Self Balancing Sep-  
arator, and the only one with the  
Link Blade Device.

**SMALLEST BOWLS**

**LOWEST SPEEDS**

**FEWEST PARTS**

**MOST DURABLE.**

**D. H. BURRELL & CO., Little Falls, N. Y.**

Manufacturers of  
CREAMERY, DAIRY AND CHEESE FACTORY APPARATUS AND SUPPLIES  
also B-L-K MILKING MACHINES

We are complete outfitters of all plants for handling milk products. If you are in the dairy manufacturing business in any capacity and want to keep up with latest and best methods, or if you are thinking of going into it, the first thing to do is to get into communication with us. We are at your service in the planning, building and equipping of Creameries, Cheese Factories, Sanitary Milk Plants and Private Dairies. Our experience in this line is worth money to you, yet it costs you nothing but the asking.

### **CREAMERY PACKAGE MFG. CO.**

182 TO 188 E. KINZIE ST.  
CHICAGO

### **EXPENSES IN COLLEGE**

\$250 cash or a year in College can be earned by one young man or young lady in each county in the United States. Plan easy and does not interfere with other occupation. No money required.

For particulars address

M. H. PEMBERTON,  
Columbia, Missouri.

Citizens 3796

Bell 1590

## **HIGH STREET TAILORS**

166 N. HIGH STREET

are showing the most extensive line of blue, gray and green fabrics ever offered in Columbus. Newest patterns. Best paid cutters in the city.

### **POPULAR PRICES.**

Let us build a suit that will enlarge your circle of friends. **CALL.**

It helps us and pleases the advertiser when you say, "I saw it in THE AGRICULTURAL STUDENT."

# EASY IN EVERY WAY

---

## SKIMMING WITH AN IMPROVED DE LAVAL

---

Skimming milk with an improved DE LAVAL Cream Separator is an easy, simple matter from start to finish. Getting the machine ready, filling the supply can, turning the crank, and cleaning when through are all done with the greatest ease and convenience.

Every part of the DE LAVAL machine is designed for easy operation. The bowl construction permits of its being very compact and small in size and requiring but low speed. The length and height of the crank handle are just right for easiest turning. The method of gearing is the product of perfect engineering. Thus the necessary speed is maintained with the least continuous effort on the part of the operator:

Some separators are so designed as to run deceptively easy when starting, but greatly tire or strain the operator in a half hour's use. The DE LAVAL turns easy from the beginning to the end of a run. Scientifically correct mechanical construction throughout is the reason for it.

The improved DE LAVAL machine is so simple in every feature that an inexperienced person could if necessary take it apart from top to bottom in five minutes, and put it together again within ten minutes. There is no need of expert knowledge or hard work in operating a DE LAVAL machine or handling any of its parts. Its "Easy in Every Way."

Our illustrated catalogue explains DE LAVAL simplicity and ease of operation in detail. Let us send you a copy, or, better still, try a machine for yourself in your own dairy. You have but to ask for either.

---

## THE DE LAVAL SEPARATOR CO.

GENERAL OFFICES: 165-167 Broadway, NEW YORK.

42 E. Madison Street  
CHICAGO

1213 and 1215 Filbert St.  
PHILADELPHIA

Drumm and Sacramento St.  
SAN FRANCISCO

173-177 William Street  
MONTREAL

14 & 16 Princess Street  
WINNIPEG

107 First Street  
PORTLAND, OREGON